3-Methylcholanthrene/20-Methylcholanthrene (3-MCA)

1925 Wieland synthesized 3-MCA from desoxycholic acid. [1]

1951 Riegel *et al.* stated "...simultaneous painting of 20-methylcholanthrene and 1,2,5,6-dibenzfluorene delayed skin carcinogenesis in mice beyond the period characteristic of methylcholanthrene alone...." [emphasis added] [2]

1961 Stanton and Blackwell induced epidermoid carcinoma in the lungs of rats which received 3-MCA intravenously. [3]

1964 Kroller claimed isolation of 3-methylcholanthrene from cigarette smoke; 3-MCA was determined to be carcinogenic to mouse epidermis. [4]

1964 Wynder and Hoffmann hypothesized, "since this carcinogenic hydrocarbon has as yet not been found in any other combustion product, it remains a doubtful assumption that it is present in tobacco smoke until analytical criteria such as ultraviolet absorption and fluorescence spectra and further details of isolation method are presented." [5]

1976 Dipple, in his article on polynuclear aromatic hydrocarbons concludes, "[E]xperimental studies of the carcinogenic activities of hydrocarbon metabolites indicate that the 3-methylcholanthrene-1-and 2-ones are probably the most active metabolites identified to date." [6]

1977 The Royal College of Physicians characterizes polycyclic aromatic hydrocarbons as one of the two (along with *N*-nitroso compounds) chief initiators of cancer in tobacco smoke.

In addition, The Royal College of Physicians reports that "[v]itamin A appears to protect rats against precancerous changes in the living cells and early tumors of the respiratory tract produced by the potent carcinogen 3-methylcholanthrene." [7]

1979 The report of the U.S. Surgeon General does not mention 3-methycholanthrene. [8]

1979-1980 In two separate studies, Rinkus *et al.* (1979) and Bartsch*et al.* (1980) found several cigarette smoke constituents to be mutagenic. Among those were 3-MCA. [9]

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